REMARKS

Claims 1, 7, 9, 10, 14, 35, 39 and 40 are amended. Claims 45-58 are cancelled. New claim 59 is added. Claims 1-44 and 59 are pending in the application.

Claims 1-45 and 47-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over various cited combinations of the following references: Pavate, U.S. Patent No. 6,001,227; Nakanouchi, U.S. Patent No. 4,584,078; Sawamura, U.S. Patent No. 4,232,970; Woodard, U.S. Patent No. 5,494,743; King, U.S. Patent No. 4,697,080 and Kitamura, U.S. Patent No. 5,477,049. Without admission as to the propriety of the Examiner's rejections, claims 45 and 47-58 are cancelled. With respect to claims 1-44, the Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 1-44 are allowable over the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura for at least the reason that the references, individually or as combined, fail to teach or suggest each and every limitation in any of those claims.

As amended, independent claim 1 recites providing a substrate comprising a first shade and filtering a fluid through the substrate, the filtering imparting a second shade to at least a fraction of the substrate. Claim 1 further recites obtaining data about particulates retained on the substrate utilizing a microscope and determining a contrast of two or more of the particulates relative to the substrate comprising the second shade. The amendment to claim 1 is supported by the specification at, for example, page 17, line 20 through page 18, line 11. The six cited references, individually or as combined, fail to disclose or

suggest the claim 1 recited filtering to impart a second shade to at least a fraction of the substrate and retain particulates on the substrate which are subsequently analyzed using a microscope for determining a contrast of two or more of the particulates relative to the substrate comprising the second shade. Accordingly, independent claim 1 is not rendered obvious by the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura and is allowable over these references.

Dependent claim 7 is amended to properly depend from claim 1. Dependent claims 2-8 are allowable over the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura for at least the reason that they depend from allowable base claim 1.

As amended, independent claim 9 recites providing a composition having a purity of at least 99.995%, dissolving at least a portion of the composition to form a mixture, and generating information about components retained on a substrate after filtering the mixture. The amendment to claim 9 is supported by the specification at, for example, page 1, lines 20-21 and page 6, line 25 through page 7, line 3. The 6 cited references, individually or as combined, fail to disclose or suggest the claim 9 recited dissolving at least a portion of a composition having a purity of at least 99.995% to form a mixture and generating information about components retained during filtration of the mixture through a substrate. Accordingly, independent claim 9 is not rendered obvious by the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura and is allowable over these references.

Dependent claim 10 is amended to correct typographical errors. Dependent claims 10-13 are allowable over the various cited combinations of Pavate, Nakanouchi,

Sawamura, Woodard, King and Kitamura for at least the reason that they depend from allowable base claim 10.

As amended, independent claim 14 recites forming a first solution comprising a dispersion of undissolved material from a first portion of a composition, forming a second solution comprising a dispersion of undissolved material from a second portion of the composition, and depth profiling the composition by comparing information generated from the first and second portions of the composition. The six cited references, considered individually or as combined, fail to disclose or suggest the claim 14 recited depth profiling comprising comparing information generated from a first portion of a composition and a second portion of the composition. Accordingly, independent claim 14 is not rendered obvious by the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura and is allowable over these references.

Dependent claims 15-34 are allowable over the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura for at least the reason that they depend from allowable base claim 14.

As amended, independent claim 35 recites providing a composition comprising at least one of Sb, Pb and Sn, collecting undissolved components after selective dissolution of the composition, and obtaining data about scattering of light by the undissolved components utilizing a microscope. The six cited references, individually or as combined, fail to disclose or suggest the claim 35 recited selectively dissolving some components of a composition comprising at least one of Sb, Pb and Sn. Accordingly, independent claim 35 is not rendered obvious by the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura and is allowable over these references.

Dependent claim 39 is amended to correct typographical errors. Dependent claims 36-39 are allowable over the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura for at least the reason that they depend from allowable base claim 35.

As amended, independent claim 40 recites retaining impurities comprised by a composition on a substrate, modifying a light absorbing property of at least some of the impurities retained on the substrate, and obtaining data including a relative darkness of impurities relative to a background defined by the substrate. The amendment to claim 40 is supported by the specification at, for example, page 19, lines 19-26. The six cited references, considered individually or as combined, fail to disclose or suggest the claim 40 recited modifying a light absorbing property of impurities retained on a substrate and obtaining data including relative darkness of the impurities relative to a background defined by the substrate. Accordingly, independent claim 40 is not rendered obvious by the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura and is allowable over these references.

Dependent claims 41-44 are allowable over the various cited combinations of Pavate, Nakanouchi, Sawamura, Woodard, King and Kitamura for at least the reason that they depend from allowable base claim 40.

New claim 59 does not add "new matter" to the application since the claim is fully supported by the specification as originally filed. Claim 59 is supported by the specification at, for example, page 6, line 25 through page 7, line 9. Claim 59 is allowable over the art of record for at least the reason that it depends from allowable base claim 35.

For the reasons discussed above, pending claims 1-44 and 59 are allowable.

Accordingly, applicant respectfully requests formal allowance of claims 1-44 and 59 in the

Examiner's next action.

Respectfully submitted,

Dated: *June 5, 2003*   By: *Jennifer J Taylor*

Jennifer J. Taylor, Ph.D.
Reg. No. 48,711

Application Serial No. 09/595,583
Filing Date .... June 15, 2000
Inventor.. John D. Mize et al.
Assignee..Honeywell International Inc.
Group Art Unit...:...................................1743
Examiner ....Gakh, Y.
Attorney's Docket No. ....30-5074(4015)
Title: Methods of Generating Information About Materials Present In Compositions and
       About Particulates Present In Fluids

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING RESPONSE TO MARCH 5, 2003 FINAL OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions and strikeouts indicate deletions.

1.   (Amended) A method of generating information about particulates present in a fluid, comprising:

providing a substrate comprising a first shade;

filtering the fluid through a the substrate, the particulates being retained on the substrate during the filtering, the filtering imparting a second shade to at least a fraction of the substrate;

after the filtering, scanning across at least a portion of the substrate with a microscope, the scanning comprising automated displacement of the substrate relative to an observing portion of the microscope along a pattern, the microscope obtaining data about said particulates at locations along the pattern;

digital image processing of the data obtained by the microscope to generate information about said particulates; and

determining a ~~relative~~ contrast of two or more of the particulates <u>relative to the</u>
<u>fraction of the substrate comprising the second shade</u>.

7.   (Amended)   The method of claim 1 ~~wherein the~~ <u>further comprising</u>
determining a relative contrast of the particles <u>with respect to at least one of:</u> ~~comprises~~
~~one or more of determining: (1) contrast of the particles relative to a background defined by~~
~~the substrate, (2)~~ color of the particles, ~~(3)~~ fluorescence of the particles, ~~(4)~~ response of the
particles to electrons, ~~(5)~~ response of the particles to photons, ~~(6)~~ response of the particles
to x-rays, and ~~(7)~~ response of the particles to particle beams.

9.   (Amended) A method of generating information about materials present in a
composition, comprising:

<u>providing a composition having a purity of at least 99.995%;</u>

utilizing a reagent to dissolve at least a portion of the composition and thereby form
a mixture;

filtering the mixture through a substrate, at least some components of the mixture
being retained on the substrate during the filtering;

after the filtering, scanning across at least a portion of the substrate with a
microscope to obtain one or more images of the substrate; and

digital image processing of the one or more images to generate information about
said retained components, at least some of the generated information relating to a relative
contrast of the components.

10. (Amended) The method of claim 9 wherein the generated information is information about one or more of the size, type, quantity and shape of the retained components, and wherein different component types correspond to differences in at least ~~on~~ one of conductivity, oxide content and carbon content ~~between component~~.

14. (Amended) A method of generating information about materials present in a composition, comprising:

utilizing a reagent to disperse ~~at least~~ a first portion of the composition and thereby form a first solution comprising a dispersion of undissolved material ~~in a solution~~;

filtering the ~~dispersion~~ first solution through a first substrate, at least some of the undissolved material being retained on the first substrate during the filtering;

forming a second solution comprising a dispersion of undisolved material from a second portion of the composition;

filtering the second solution through a second substrate, at least some undissolved material being retained on the second substrate;

~~after the filtering,~~ scanning across at least a portion of the first substrate with a microscope, the scanning comprising automated displacement of the first substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about said retained undissolved material at locations along the grid pattern, at least some of the obtained data relating to a relative contrast of the retained undissolved material; ~~and~~

scanning across at least a portion of the second substrate with a microscope, the scanning comprising automated displacement of the second substrate relative to an

observing portion of the microscope along a grid pattern, the microscope obtaining data about said retained undissolved material at locations along the grid pattern, at least some of the obtained data relating to a relative contrast of the retained undissolved material;

processing the data obtained by the microscope to generate information about one or more of the size, shape, type and quantity of the undissolved material, undissolved material type being related to at least one of a conductivity, an oxide content and a carbon content of the undissolved material; and

depth profiling the composition, the depth profiling comprising comparing information generated from the first substrate to information generated from the second substrate.

35.   (Amended) A method of generating information about materials present in a composition, comprising:

providing a composition comprising at least one of Sb, Pb and Sn;

selectively dissolving some components of the composition in a reagent while leaving other components undissolved;

collecting at least some of the undissolved components on a filter surface;

scanning across at least a portion of the filter surface with a light microscope, the scanning comprising automated displacement of the filter surface relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about scattering of light by the undissolved components on the filter surface, the undissolved components comprising at least two types, a first of the two types being darker than a background defined by the filter surface and a second of the two types being lighter than the background; and

digital image processing of the data obtained by the microscope to generate information about one or more of the size, quantity and aspect ratio of the undissolved components; the processing comprising a sort of the undissolved components amongst the two types.

39.   (Amended) The method of claim 35 wherein the first type of undissolved components predominately ~~comprise~~ comprises carbon and wherein the second type of the undissolved components predominately ~~comprise~~ comprises one or more oxides.

40.   (Amended) A method of generating information about impurities present in a metal composition, comprising:

utilizing a reagent to selectively dissolve a portion of the composition relative to at least some impurities present in the metal composition, the dissolved portion forming a solution with the reagent; the impurities being at least two different types; one of the at least two types being a first type and another of the at least two types being a second type;

filtering the solution through a substrate, at some of the first and second types of the impurities being retained on the substrate during the filtering;

after the filtering, modifying a light absorbing property of at least some of the impurities retained on the substrate;

scanning across at least a portion of the substrate with a light microscope, the scanning comprising automated displacement of the substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about the impurities at locations along the grid pattern, the data including a relative darkness of the

impurities relative to a background defined by the substrate; the first type of impurities being darker than the background and the second type of impurities being lighter than the background; and

processing the data obtained by the microscope to generate information about the size, quantity and type of the impurities.

Claims 45-58   (Cancelled).

--END OF DOCUMENT--